IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION OF
UBER
Continuation of Application No. 09/575,809
Filed: August 28, 2001
Title: MULTI-PATIENT FLUID DISPENSING

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PRELIMINARY AMENDMENT

Hon. Commissioner of Patents
Washington, D.C. 20231

Sir:

Please enter the following Preliminary Amendment after calculation of the filing fee.

IN THE DRAWINGS:

Please substitute the attached six (6) pages of formal drawings, Figures 1-10 to replace those filed in the parent application No. 09/575,809. A Letter to the Official Draftsperson is attached.

IN THE SPECIFICATION:

Page 1, delete the whole paragraph starting on line 4 and replace it with the following new paragraph:

In U.S. Patent No. 5,569,181 assigned to the same Assignee as the present invention, discussion was undertaken with regard to the problems arising from the potential cross-contamination that can occur with a multi-patent fluid dispensing system. One facet of the system provided involves prevention of contamination of the multi-use segment of the fluid path during the time the system is connected to the patient. The disclosed system utilized one of the two methods: a back flow preventing valve and a sterile filter, or a physical separation

B1

B1 achieved by filling a dose container and separating the dose container from the filling fluid path before connection to the patient.

Page 2, delete the whole paragraph starting on line 9 and replace it with the following new paragraph:

B2 Means of preventing contamination of the fluid path by contaminants other than the patient being injected are presented in U.S. Patent No. 5,806,519. Any of the concepts presented there may be matched with any of the embodiments presented here. The relevant feature is the "per patient" connection.

Page 10, delete the whole paragraph starting on line 20 and replace it with the following new paragraph:

B3 FIG. 8 shows another means of dividing the fluid flow into discrete packets to prevent cross-contamination. This is a variation on the peristaltic idea, where the fluid path splits into two parts. In this figure, fluid is flowing into inlet 6 of chamber 1, its outlet 7 is blocked so the chamber expands and drives the pressure plate 3 against chamber 2. This drives fluid out of chamber 2 and on to the patient. When the pressure plate reaches the maximum designed travel, the inlet valve 4 and outlet valve 5 switch position, allowing chamber 2 to fill and chamber 1 to empty. This allows continuous fluid flow but never permits a continuously open fluid path to exist. It is preferred that the pressure plate upon reaching its end of travel mechanically trigger the inlet valves, and that there be a mechanical linkage between the valves so that they can not both simultaneously open to the same chamber. These controlling strategies could also be performed by the ECS, with redundancy and verification of valve positions. It is possible to extend this concept to using three or ore chambers, to get a more even flow.

Page 11, delete the whole paragraph starting on line 12 and replace it with the following new paragraph:

B4 FIG. 10 shows another implementation of packetizing of the fluid flow. In this embodiment it is accomplished via air separation rather than via an intervening solid. After the fluids are mixed, they flow through a back flow valve 23. The fluid then flows through a "y" where it is mixed with packets of air. The air packets separate fluid packets, preventing back diffusion or migration of contaminants if the flow slows or stops. The wall material and